



THE WORLD IN 2040

The future of
healthcare, mobility,
travel and the home

**THE
FUTURE
TRAVEL
EXPERIENCE**



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THE FUTURE TRAVEL EXPERIENCE

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About the Author

Ray Hammond has been researching, writing and speaking about future trends and developments for almost 40 years.

He is the author of 14 books on the future and he has written, consulted and lectured for the world's great corporations, for governments and for many universities in Europe, the USA and in Asia. He is a regular broadcaster on both national and international radio and TV channels.



In 2010, Michal Gorbachev presented him with a medal for his services to futurology which was issued by the Italian Chamber of Deputies on behalf of the United Nations. In the citation, President Gorbachev wrote:

"We are delighted to honour Ray Hammond for his constant commitment to research and for his stunning speculations about the future, enlightened by scientific knowledge and an evident concern for humankind."

Author's Note

This report represents my own opinions about likely future developments. It does not represent the views of Allianz Partners. When I was asked to research and write this report, I was provided with guidance about the topic areas to research, but I was given a free hand to develop all editorial matter independently. Any errors and omissions are my own responsibility.

The Future Travel Experience

By 2040, international travel will have become a faster, easier and more ecologically-sustainable activity. It will also deliver a far richer traveller experience.

Travel is one of the world's boom industries. Currently, there are around two billion tourist arrivals per year – a figure that has been growing annually at around 6 per cent – while business travel is growing even more rapidly.

Approximately 20 per cent of all new jobs created in the world are travel and tourism-related.

With airline passenger numbers forecast to double by 2040 – and a similarly healthy projection for train travel and cruise passenger numbers – it looks as if the travel industry is set for a long period of prolonged growth.



The Changing Nature of Tourism

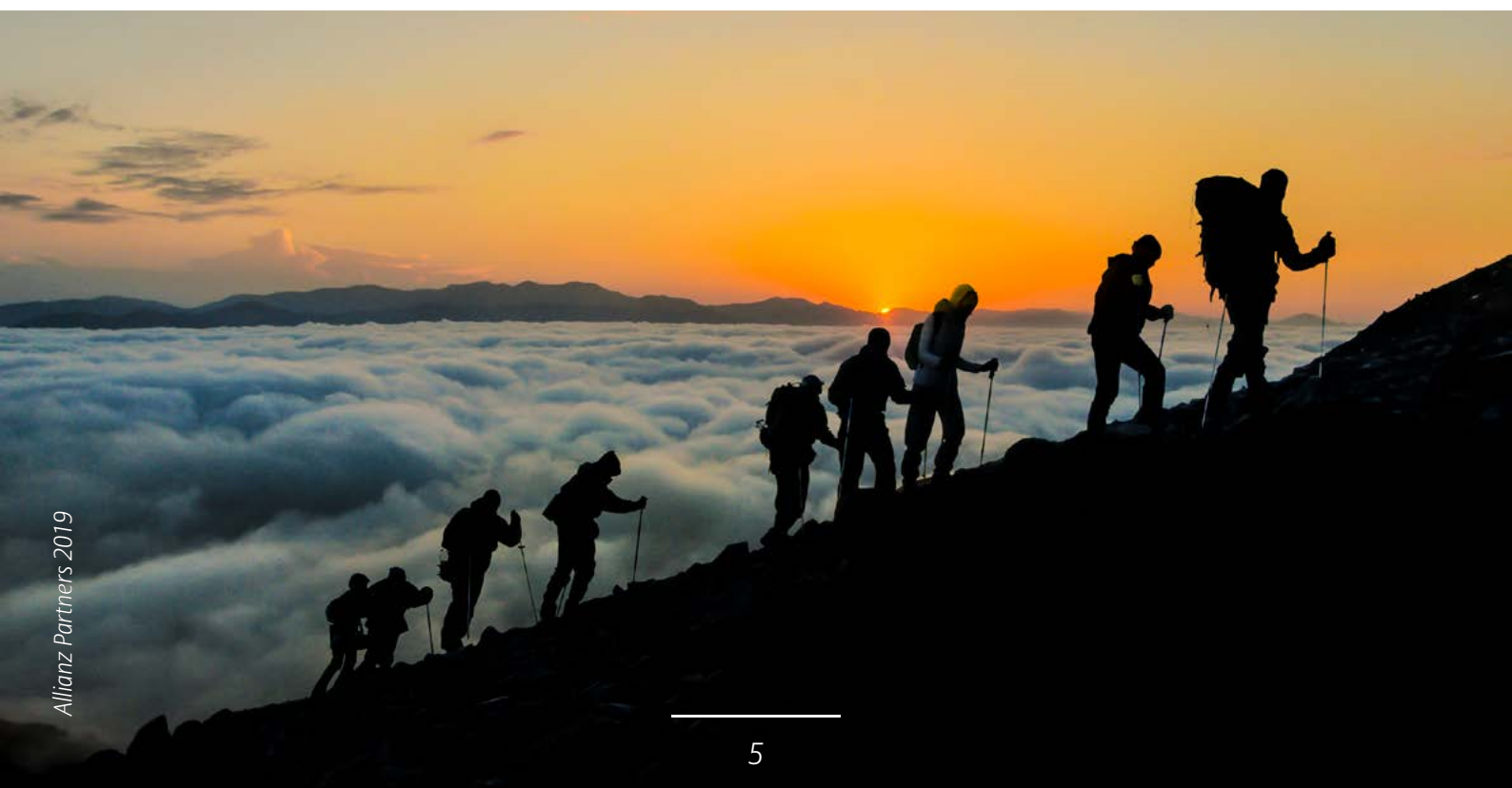
The type of tourism undertaken by the public has been changing in recent decades. Tourism has changed from being a service industry that merely offers travellers a flight, a room and some food, to an industry that offers experiences. Travel is now more about rejuvenation, adventure, fulfilment, learning new skills and 'being more of who you are', rather than tourists just ticking off places to see from a list before flopping in the sun.

The rise and popularity of AirBnB and other home-sharing and accommodation-booking apps underlines this new trend in the culture of tourism. When a traveller stays in an apartment offered by AirBnB, he or she is probably staying in someone's home and, as a result, feels a closer connection to the culture of the destination being visited. The travel experience is enriched. Or, a traveller may choose to stay in a tree-house, on a boat, in an historic building, in a monastery or in a deconstructed hotel.

Accommodation apps have suddenly turned every type of residence into a potential hotel room.

As a result of this change in the culture of tourism, accommodation apps and tourism executives are rushing to provide 'experiences' for the traveller, from mountain climbing to city tours; no one in Japan or Finland predicted twenty years ago that people would pay to spend the night in an igloo or watch Sumo wrestlers train. Similarly, cruise ship operators are now theming their voyages to provide tailored, niche experiences.

By 2040, the word 'tourism' will probably have been replaced or supplemented by another word or phrase that captures the element of active experience that will characterise many future vacations and leisure trips (e.g. 'experience travel'). And there is little doubt that the current high-growth trend for extreme sports (and extreme selfie videos) will have become mainstream.



Planning Leisure Travel

Unlike other consumer purchases, travel tends to be heavily researched, as customers require lots of information before they select their method of travel, arrange their travel insurance and begin their journey.

Most of today's travellers plan their forthcoming trips on the internet. They often book their tickets on-line and examine hotel and accommodation options by visiting comparison web sites. They select restaurants to book by scanning sample menus and by checking reports on customer-review web sites. Only for a complex, multi-destination trip are they likely to ask for the advice and help of professional travel agents.

This trend towards self-booked travel will continue and, by 2040, multi-sensory virtual reality technology will allow armchair travel planners to be able to 'step into' virtual hotel rooms, visit street carnivals, explore museums or walk into a particular restaurant. The VR technology of 2040 will not require users to wear clumsy head-sets, but will be projected within ordinary room settings.

The sights, sounds, smells and sensations of virtual reality in 2040 will be so life-like that it will allow would-be travellers to fine-tune their choice of destinations and the experiences they wish to sample during their trip.

Some travel commentators suggest that the ultra-realistic virtual reality experiences of the future may reduce humanity's desire for physical travel; if would-be travellers can experience the sights, smells and sounds of standing on the Great Wall of China in their own living rooms, why would they bother to make the actual trip?



But even the most rich and detailed virtual reality experience will not allow virtual travellers to taste the cuisine, to sample the culture, to meet local people or to take unplanned excursions away from the well-trodden routes. As a result there is good reason to believe that virtual tourism will actually stimulate the demand for physical travel.

And, by 2040, personal software assistants will be sufficiently intelligent to help travellers book their trips online and they will be able to cope with all of the complexities of multi-destination travel planning.

The Check-In Experience

By 2040, your face will be your passport and your boarding pass. Facial pattern recognition systems are already in experimental use at airports and within 20 years, computer systems that can reliably identify your face will be in widespread use at airports, train stations, shipping terminals, etc. You will check in with a glance and simply walk through security and passport control.

Other forms of biometric identification – e.g. iris scans and fingerprint recognition – are likely to supplement and back-up face-recognition systems. For legal reasons, you may still be required to carry a passport, but queues and waiting times will be substantially reduced.

Inside the terminal or station, an artificially intelligent (AI) ‘assistant’ will introduce itself via your electronic device or body network and will show you to your preferred stopping-off points – lounges, shops, restaurants, bars, etc. – and will inform you of your flight/train/ship travel status, of your boarding times and will guide you through the process, leaving you only when you are safely in your seat.

And unless you choose to do so, you will no longer be carrying your own luggage to the terminal or station. App-based services that will pick up and deliver your luggage to its destination for a modest fee are already in operation and, by 2040, these services are likely to be ubiquitous.

By 2040, your face will be your passport and your boarding pass

The Air Passenger Experience

Would you be happy to fly in a windowless plane in which images of the sky outside are projected onto screens inside the cabin? Such a design saves weight and would improve the efficiency of passenger aircraft. One major airline is actively considering ordering such planes.

Or would you be prepared to fly in a jet that has only one pilot – or even no pilots? By 2040, planes will be able to fly themselves safely, but will the travelling public be ready to fly when unsupervised software is in control?

If saving journey time is important to you as a mid-21st Century traveller, perhaps you would choose to make your leisure or business trip onboard one of the new-generation supersonic passenger jets? By 2040, mid-sized supersonic passenger planes will be offering business-class passengers the opportunity once again to cross the Atlantic or a whole continent in just 3.5 hours.

The first of those mid-sized supersonic passenger jets is already in development at a start-up plane-maker called Boom Technology. Japan Airlines and Virgin Atlantic have already invested in Boom and have ordered 20 supersonic planes each. Altogether, Boom now claims to have orders for 76 aircraft.

For some leisure travellers fed up with long journeys on slow planes, the option of supersonic air travel may lure them back to visiting long-haul destinations. This is likely to alter the balance of attractiveness between short-haul trips and long-distance destinations.

International Train Travel

International train travel is also growing rapidly and, by 2040, cross-border train journeys will be smoothed and improved in many parts of the world.

Computer networks and the 'Internet of Things' (IoT) will manage national and international rail networks and this will allow trains to be run faster, closer together and will manage train time-keeping to the second. In many cases, border controls and checks will be fully automated. Computer-controlled rail networks will also increase passenger throughput at busy stations and will reduce the energy consumed per passenger mile.

The best example of a computer-controlled international rail network in development is the European Rail Traffic Manage System, a EU-wide set of standards for rail networks which is intended to ensure train inter-operability between national rail networks. The EU is heading towards a Single European Rail Area (SERA) and in South-West Asia, ASEAN is negotiating cross border train operability between neighbouring countries.

Trains are already one of the most environmentally friendly ways to travel and by 2040, most trains will be either all-electric powered or will be diesel-electric hybrids. Some will be powered by completely clean hydrogen fuel cells.

Train 'drivers' will have become train managers and supervisors as computers take control of the train's progress within the network. Speeds will have increased on most rail networks, with most high-speed trains running at speeds above 201 kmph (125 mph).



One example of a forthcoming international train excursion is the new direct train route from London to Bordeaux being planned by the British rail company HS1. On this route from London to the famous French wine region, trains will be reaching speeds of 322 kph (200 mph) whisking passengers to and from the cities in less than five hours.

This example suggests that for many journeys in 2040, international train travel will provide an efficient and comfortable alternative to short-haul flying.



Ever More Luxurious, More Adventurous and Greener Cruising

Cruise ships of 2040 will be far more environmentally-friendly than today's giant ocean liners. Ship operators are now building vessels that are powered by Liquified Natural Gas (LNG). LNG is a light fossil fuel with almost no greenhouse gas emissions and this will transform cruise vacations into one of the greenest ways to travel the world.

The first LNG-powered ship, Carnival's AIDAnova, was launched in 2018 and a new fleet of LNG-powered cruise liners will come into service over the next ten years.

In addition to a cleaner form of travelling, there will also be distinct changes in the type of travel products on offer. Cruising is a rapidly-growing leisure sector and operators are rushing to appeal to younger passengers who want a different type of on-board experience.

The range of destinations passengers can expect to book a cruise to visit is continuing to grow, with Asia currently proving particularly fertile ground. Antarctica and Alaska look set to grow in popularity too, particularly for younger Millennial cruisers. But this trend will be unlikely to mean a decline in European cruises. Many travel experts expect cruise lines to add more variation to existing itineraries, breathing new life into established European routes. And there's growing interest in cruising around Africa and islands such as Madagascar.

By 2040, there will also be many more cruises themed around special interests and occupations such as computer-gaming, cookery, wellness and wellbeing, ballroom dancing, adult education, etc. And, we are likely to see more branded experiences for cruise passengers. Set meal times and buffet venues will be out; branding will become mainstream. DreamWorks, Apple, Jamie Oliver, LEGO and Starbucks are among brands already co-operating with cruise lines to deliver unique passenger entertainment and enjoyment.

Other passenger experiences available on cruise ships of 2040 will include off-ship passenger drone excursions, drone 'firework' displays at sea and in-room robotic chefs.

On-Board Entertainment

Whether the traveller of 2040 chooses to travel on a plane, a high-speed train or a cruise liner, the on-board entertainment experience will be transformed. Ultra-high-speed network connections will mean that virtual reality experiences will be astonishingly life-like.

On planes and cross-border trains, economy seat passengers will be obliged to use VR headsets because of space and privacy limitations, but plane and train passengers in premium virtual reality 'pods' will be able to enjoy headset-free, multi-sensory virtual reality experiences.

Seated in a VR Pod on your way to Rio de Janeiro, you will be able to experience the sights, sounds, smell, taste and atmosphere of the city's famous carnival long before you land.

And where space is at less of a premium – e.g. on cruise liners – passengers will be able to enjoy virtual sports such as golf or archery as an experience within an experience.

On Arrival

Inside the hotel lobby of 2040, guests will initially be greeted by a software assistant. In luxury establishments, new arrivals will be swiftly guided to a friendly human face to complete check-in. But in a large number of business and budget hotels, check-in and guidance to the room will be entirely automated and provided by software assistants.

Some hotels will even provide robotic baggage carriers to move luggage. (AirBnB and similar accommodation-booking apps will also provide AI assistants to guide travellers to their location and to provide for their needs during their stay.)

Travellers' face pattern, fingerprint, smart-watch or other electronic device will serve as the room key and once inside guests will be reunited with their luggage.

In hotel lobbies of 2040, guests will initially be greeted by a software assistant

Within the room, all hotel guest services will be controlled by the dedicated software assistant. If guests want housekeeping summoned and clothes ironed, room service ordered or a bath run, they will merely ask the assistant to carry out the task on their behalf. The software assistant will be a constantly-available concierge. Another

service that will be on offer in many of the hotels of 2040 will be on-site 3D clothes printing.

Although 3D garment printing is still in its infancy today, a few years from now it will be possible to send your measurements (in all probability in the form of a virtual mannequin of your body) to your hotel in advance of your arrival and heavy or bulky clothes (e.g. raincoats or shoes) will have been printed out to await your arrival. All will cost a fraction of the price of today's human-made garments and all will fit you perfectly.

On-site 3D clothes printing will significantly reduce the amount of luggage the tourist of 2040 will have to transport, and the cost of 3D printed garments will be sufficiently inexpensive that travellers will be able to leave the clothes behind for local recycling.

Out And About

Out on the street, travellers will be able to instantly identify points of interest around them using 'augmented reality' sunglasses, spectacles, electronic contact lenses or hand-held electronic devices. The tourist street experience of 2040 will be delivered by ultra-high-speed wireless networks and will be extremely information-rich.

Augmented reality, or AR, is a digital technology, which makes changes to a person's perception of their physical surroundings when viewed through a particular device. The technology has similarities with virtual reality, but AR does not replace the real-world environment, but augments it by overlaying digital components.

In a street setting, as a traveller glances at a restaurant, its name and description will appear overlaid on the sunglasses or other device. If the tourist wishes, it is also possible to drill down to see sample menus and prices.

The information provided to travellers and other users of AR will come from the internet, from the local Internet of Things (IoT), from the global positioning system (GPS) and from local cellular network services.

At places of interest, AR will provide a description and history of the monument and in museums, churches and other sites of cultural interest, the AR system can identify and describe objects, works of art and other exhibits.

Travellers in 2040 will also be able to instantly understand the languages being spoken around them.

Many of today's travellers speak only their own native tongue and are nervous about visiting destinations where lack of a common language might cause difficulties. By 2040, this barrier will no longer exist, as low-cost wireless ear pieces will provide instant translations between all of the world's major languages.

This ability to speak local languages in real time will be a major enhancement of the travel and tourist experience and is likely to further drive the demand for travel.



Thanks to instant translation technology, travellers will feel as if they are almost native speakers of the languages they encounter

An early example of such real-time language translation technology is Google's Pixel Buds. Working with a Google Pixel smartphone and the Translate app, these earpieces can translate 40 languages and can also enable users to speak in those foreign languages. Early reports suggest that this device is very effective for simple transactional translation.

But even although the Pixel Buds and Translate work reliably, today, only 'early adopters' and technology enthusiasts would be likely to make their travel plans based on the newly-found ability to speak and understand simple sentences in a foreign language.

By 2040, however, such systems will be a universal part of the digital 'body network' most of us will wear and we will have become very used to the many services such a wireless network will supply.

As part of this network, in-ear ambient-sound ear pieces will translate all major world languages instantly (and reply for the user in the same language). And the quality of translation will have improved so that travellers in 2040 will feel as if they are almost native speakers of the languages they encounter. With this level of translation tourists will be able to people-watch, to explore local TV and media, and meet locals beyond just those who speak the traveller's own language, allowing them to connect with people and culture in more intimate ways.

For many would-be tourists, language-translation services will take the fear out of travelling to little-visited places on the planet and, as a result, many new destinations are likely to be opened up to tourism.



Many other cities are also pressing ahead with the idea of testing electric pilotless drones for urban transportation – as a way of reducing ground traffic congestion and air pollution. These include cities in the United States, China, New Zealand, France and Germany.

Inside the taxi (car or drone), travellers will tell an AI software assistant where they want to go and then sit back to enjoy the ride. On longer journeys, virtual reality systems for entertainment will be available, although some travellers may prefer to work or to sleep.

For inter-city travel, self-piloted electric drones with tilting-rotors – for faster forward flight – are being developed.

These will offer higher speeds for longer journeys and, by 2040, will be able to cover distances greater than 320 km (200 miles). Tilt-rotor passenger drones will be pilotless and will have advanced vertical take-off and landing (VTOL) capability, enabling them to land and take off from standard city droneports.

Local Travel At The Destination

For local travel, transport options in 2040 will include self-driving taxis and pilotless drones, although it is also likely that human-driven taxi services will still be available.

Although today's traveller might feel uneasy about cars that drive themselves and aircraft that fly without pilots, the traveller of 2040 will have had many years to get used to such phenomena.

Today, there are a half-dozen prototypes of both piloted and autonomous taxi drones already flying in the world, and Dubai even plans to make such a pilotless flying taxi service available to the public in 2022.

The positive impacts of drone technology on society and the economy are hard to overstate. For business travellers, pilotless inter-city drones would make it possible to schedule meetings in New York, Philadelphia, Baltimore and Washington, DC in a single day; or to visit Paris, Brussels and Amsterdam in a morning. And leisure travellers are likely to make more trips when urban transport has become a joy rather than a traffic-jammed nightmare.

It is now clear that the future of low-altitude travel in cities (and between cities) will belong to the pilotless electric drone.

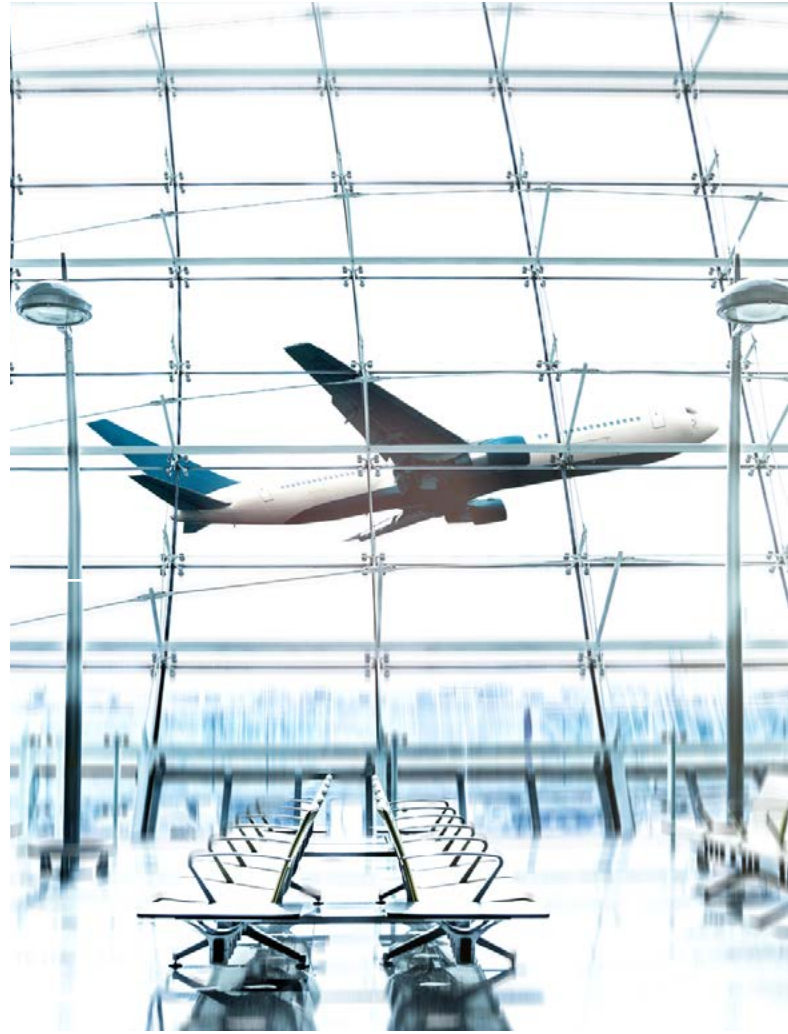
Air Travel Whilst Caring For The Environment

The projected growth in air travel is not without its problems, the most significant of which is climate change. Aviation accounts for about 4 per cent of greenhouse gas emissions and someone flying from London to New York and back generates roughly the same level of emissions as the average person in the EU does by heating their home for a whole year.

Because of the need to combat climate change, we can be sure that passenger planes of 2040 will be far more economical in fuel usage than today's jet aircraft, and a significant number of planes will be flying on sustainable aviation fuel – jet fuel derived from biomass.

But it will be electric planes that finally provide non-polluting air transport. By 2040, short-range electric planes will be in service but, because the average service life of commercial aircraft is between 21 and 33 years, it is likely that many conventionally-fuelled aircraft will still be flying – especially on long-haul routes.

Engine maker Rolls-Royce has entered a partnership with Airbus and the eAircraft division of Siemens to develop a hybrid passenger plane – partly fuelled by kerosene, partly driven by electric power. A British Aerospace 146 commuter aircraft has been adapted to carry two tons of batteries and the world's most powerful flying generator. One of its four engines is being converted to run on electricity.



This flying testbed will be used to evaluate the concept that electricity can be generated efficiently and safely in flight, and that an electric jet engine is capable of working as safely and effectively as an engine that burns kerosene.

Meanwhile, Europe's second biggest airline, EasyJet, is working with a Los Angeles-based company, Wright Electric, to develop a wholly-new commercial all-electric jet by 2027.

The new aircraft will carry around 150 passengers and will initially be 'ultra-short-haul', with a range of 540 kilometers (335 miles). But easyJet says that could be sufficient for one-fifth of its current route network, including Belfast-London-Amsterdam, Bristol-Edinburgh and Paris-Geneva.

Exotic Travel Part 1- To The Moon

For some wealthy and intrepid travellers of 2040, the world may not be enough; it may not offer a sufficiently large choice of destinations. Such privileged travellers may seek the experience of seeing the Earth from space.

By the fifth decade of the 21st Century, tourist trips into orbital space will have become regular occurrences and the cost is likely to have fallen to a fraction of today's ticket prices (Virgin Galactic is currently offering a ride into space for \$250,000).

But some travellers will want to venture further out into space. In the year 2040, tourists will probably be flying to and from the Moon on a regular basis. These trips will be unlikely to land on the lunar surface but will loop around behind the Moon before returning to Earth.

The first civilian tourist is due to orbit the Moon in 2023 and he will be flying on board SpaceX's Big Falcon Rocket (BFR). SpaceX is a private aerospace and space-rocket development company founded in 2002 by entrepreneur Elon Musk. The company is now regularly delivering satellites and payloads into low earth orbit.

The first named Moon-orbit tourist will be Yusaku Maezawa, a 42-year-old Japanese billionaire, art collector, and founder of on-line fashion retailer Zozo. He has announced that he will invite a number of friends to travel with him in the passenger capsule of the Big Falcon Rocket as it loops around the moon. The price of Mr Maezawa's moon ticket has been estimated to be \$150 million.

On their way to the Moon, space tourists may pass many orbiting advertising billboards projecting images back to Earth – if Russian company StartRocket has its way. Orbital advertising is likely to be a very contentious form of new media.

By 2040, space trips around the moon are likely to be available from several different private space companies. But, although the cost of a ticket to orbit the Moon will have fallen, a lunar visit will still be a very exotic and expensive vacation.

The first civilian tourist is due to orbit the moon in 2023

Exotic Travel Part 2 – Spring on Mars

By 2040, super-wealthy travellers who want the ultimate bragging rights about their latest vacation will probably be considering a trip to Mars.

The red planet is, on average, 225 kilometres away (140 million miles) and a one-

way trip would take between six and eight months, depending on the relative positions of Earth and Mars at the time. On the way to Mars, passengers would have to cope with the psychological stress of such a long confinement as well as space sickness, muscle loss and eye distortions (caused by zero gravity). Other problems would include prolonged exposure to space radiation which damages human DNA and has both short-term and long-term effects on health.

Landing on Mars is particularly tricky because of the low gravity and the thin atmosphere (there is little to slow a spacecraft up). But, on arrival, there would also be other problems: there is no oxygen on Mars and liquid water doesn't exist on the planet.

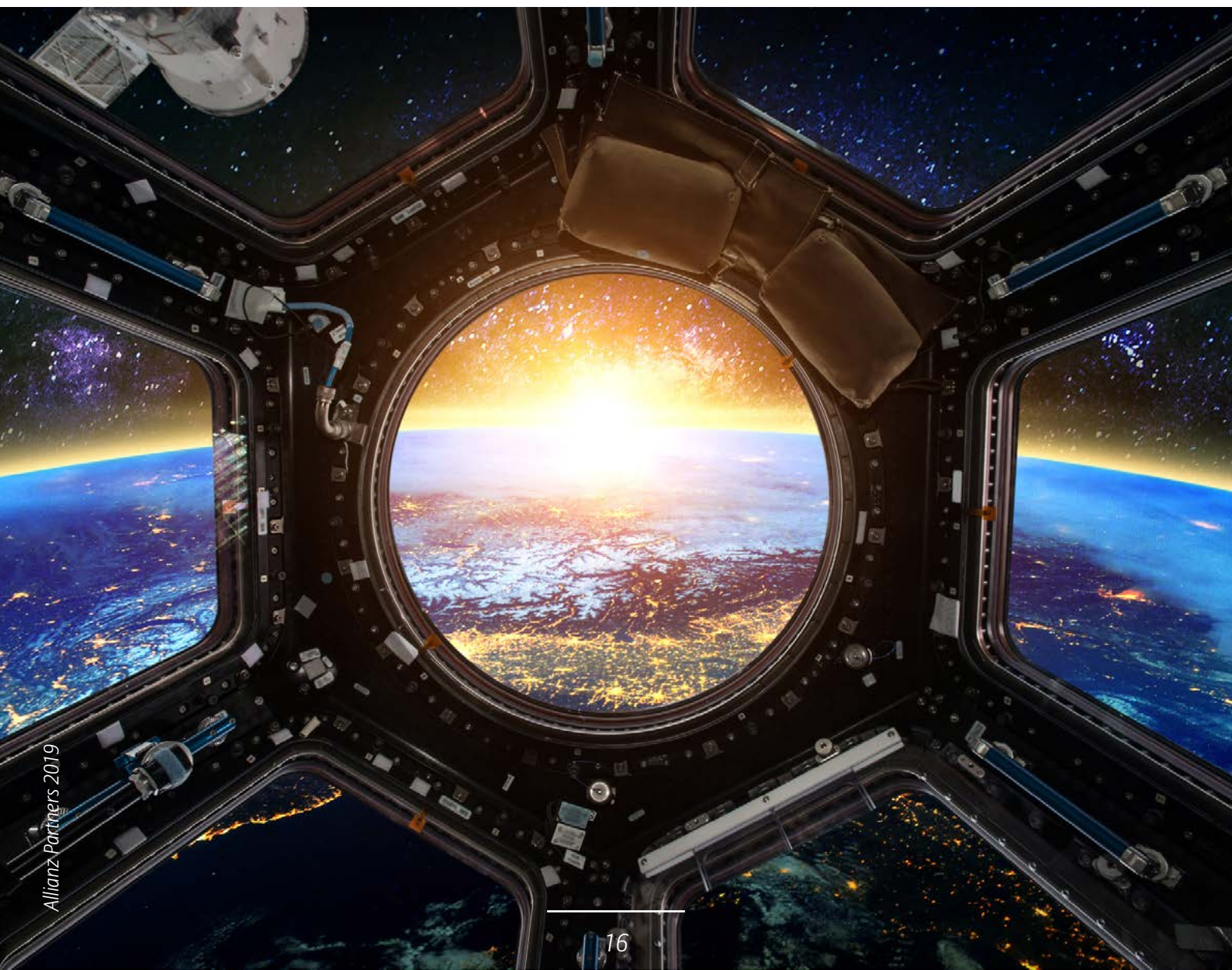
Neither does food or shelter. All supplies will have to be brought from Earth. Then there would be the question of how you would make the return journey.

NASA says it has plans to put astronauts on Mars by 2033, but the headline-grabbing Elon Musk has already said SpaceX will land passengers on the planet before 2030.

Elon Musk envisions an enormous booster rocket with 42 new Raptor engines blasting off from Cape Canaveral, Florida, and launching a spacecraft holding about 100 people bound for Mars. The spacecraft will be refuelled in orbit before heading out to the Red Planet.

In its plans, SpaceX has said that environmentally-friendly factories would be built on Mars to produce fuel for the return trip home. This would enable the start of regular trips to and from the planet for eco-tourists with deep pockets and a lot of time on their hands.

Elon Musk has also said that he expects to die on Mars ("but not on impact"), but if that doesn't put you off, then perhaps a Mars trip will be your ideal extended vacation in 2040.



Towards Sustainable and Responsible Leisure Travel

The success of the leisure travel industry brings its own problems, quite apart from the issue of climate change. The word 'overtourism' has recently been coined to describe the negative effects of too many people visiting the world's most popular tourist destinations.

For decades, most tourist destinations have tried to attract as many visitors as possible, without any thought that there could be limits beyond which local people's lives and tourists' experiences start to suffer. But the thinking of tourism managers is now starting to change.

Venice has become so over-packed with visitors that the city has erected pedestrian gates at the main entrances and are charging tourists a fee to enter the city.

When crowds get too thick, the police close the gates, limiting access to locals. In Amsterdam, residents are fed up with stag parties unused to mixing alcohol and cannabis, leaving a trail of litter and vomit and anti-tourism protesters recently attacked tourist buses in Valencia, Palma de Mallorca and Barcelona.

The Philippines government has banned tourists from the popular island of Boracay for six months because too many visitors and too few sewers had made it a 'cesspool'.

The Thai government recently restricted overnight stays on the Similan islands, and to follow Peru's Inca Trail, visitors now need a permit, and only 500 such permits are available each day. Cities throughout Europe are also beginning to investigate ways to crack down on overcrowding, home-sharing websites and anti-social behaviour.



As a response to overtourism, the world's most popular destinations are likely to make efforts to discriminate and attract the 'right type of tourist' and, where necessary, visitor numbers are likely to be controlled through reducing accommodation capacity, charging visitors for entry, pre-booking with fixed numbers, subsidising fewer flights, restricting cruise ship visits and promoting less well-known areas.

By 2040, four billion people – half of the world's population – will be part-time tourists. For this reason, it is likely that travellers wishing to visit the world's most popular tourist destinations will have to book in advance and will have to buy a ticket that grants access to particular site or destination on a particular day at a specific time.

The huge growth in global travel predicted for 2040 is welcome, but it will be vital that the travel industry offers tourist experiences that are sustainable and environmentally responsible.

